

**What is claimed is:**

1. An activated semi-crystalline, largely isotropic, coal-based carbon foam produced from particulate coal exhibiting a free swell index of between about 3.5 and about 5.0 and of a small diameter, having a density of between about 0.1 and about 0.8

5 g/cm<sup>3</sup> and an overall surface area of between about 10 m<sup>2</sup>/g and about 25 m<sup>2</sup>/g.

10 2. The activated coal-based carbon foam of claim 1 having an overall surface area of between about 15 m<sup>2</sup>/g and about 20 m<sup>2</sup>/g.

15 3. The activated coal-based carbon foam of claim 1 wherein said coal exhibits a free swell index of between about 3.75 and about 4.5.

20 4. The activated coal-based carbon foam of claim 3 having an overall surface area of between about 15 m<sup>2</sup>/g and about 20 m<sup>2</sup>/g.

5. The activated coal-based carbon foam of claim 1 wherein said coal-based carbon foam has been calcined.

6. The activated coal-based carbon foam of claim 1 wherein said  
coal-based carbon foam has been graphitized.

5 7. A monolithic activated carbon filter element comprising an  
activated semi-crystalline, largely isotropic, coal-based carbon foam  
produced from particulate coal exhibiting a free swell index of  
between about 3.5 and about 5.0 and of a small diameter, having a  
density of between about 0.1 and about 0.8 g/cm<sup>3</sup> and an overall  
10 surface area of between about 10 m<sup>2</sup>/g and about 25 m<sup>2</sup>/g.

15 8. The monolithic activated carbon filter element of claim 7 having  
an overall surface area of between about 15 m<sup>2</sup>/g and about 20  
m<sup>2</sup>/g.

15 9. The monolithic activated carbon filter element of claim 7 wherein  
said coal exhibits a free swell index of between about 3.75 and  
about 4.5.

20 10. The monolithic activated carbon filter element of claim 9 having  
an overall surface area of between about 15 m<sup>2</sup>/g and about 20  
m<sup>2</sup>/g.

11. **The monolithic activated carbon filter element of claim 7  
wherein said coal-based carbon foam has been calcined.**

5           12. **The monolithic activated carbon filter element of claim 7  
wherein said coal-based carbon foam has been graphitized.**

10